Patent claims:

1. Frequency separating filter having a deep-pass branch (8) for low frequency signals, particularly of analog communication systems, and a high-pass branch (7) for high frequency signals of digital communication systems, with multiple inductive components (11, 14) with magnetic cores,
characterized in that
the high-pass branch (7) comprises at least one component (11, 14) with a magnetic core made of an amorphous or nanocrystalline alloy.

2. Frequency separating filter according to claim 1,
characterized in that
the alloy has the composition $Co_a(Fe_{1-c}Mn_c)_bNi_dM_eSi_xB_yC_z$, with M indicating one or more elements from the group Nb, Mo, Ta, Cr, W, Ge, and P and a+b+d+e+x+y+z = 100, with

Co: a = 40 - 82 at%,
Fe+Mn: b = 3 - 10 at%,
Mn/Fe: c = 0 - 1,
Ni: d = 0 - 30 at%,
M: e = 0 - 5 at%,
Si: x = 0 - 17 at%,
B: y = 8 - 26 at%,
C: z = 0 - 3 at%,
15 < e+x+y+z < 30.

3. Frequency separating filter according to claim 2,
characterized in that
the following relationships apply:
Co: a = 50 - 82 at%,
Fe+Mn: b = 3 - 10 at%,

Mn/Fe: c = 0 - 0.5,
Ni: d = 0 - 20 at%,
M: e = 0 - 3 at%,
Si: x = 1 - 17 at%,
B: y = 8 - 20 at%,
C: z = 0 - 3 at%,
with $18 < e+x+y+z < 25$.

4. Frequency separating filter according to claim 1, characterized in that
the alloy has the composition $Fe_aCu_cM_fSi_dB_e$, with M indicating an element from the group Nb, W, Ta, Zr, Hf, Ti, Mo, or a combination of these and a + c + f + d + e = 100%, with

Fe: a = 100% - c - f - d - e,
Cu: c = 0.5 - 2 at%,
M: f = 1 - 5 at%,
Si: d = 6.5 - 18 at%,
B: e = 5 - 14 at%,

with d + e > 18 at%.

5. Frequency separating filter according to claim 4, characterized in that
the following relationships apply:
Cu: c = 0.8 - 1.2 at%,
M: f = 2 - 3 at%,
Si: d = 14 - 17 at%,
B: e = 5 - 14 at%,

with d + e = 22 - 24 at%.

6. Frequency separating filter according to claim 1, characterized in that
the alloy has the composition $Fe_xZr_yNb_zB_vCu_w$, with x + y + z + v + w = 100 at%, with

Fe: x = 100 at% - y - z - v - w,
Zr: y = 2 - 5 at%,
Nb: z = 2 - 5 at%,
B: v = 5 - 9 at%,
Cu: w = 0.5 - 1.5 at%,
with y + z > 5 at% and y + z + v > 11 at%.

7. Frequency separating filter according to claim 6, characterized in that
the following relationships apply:
Fe: x = 83 - 86 at%,
Zr: y = 3 - 4 at%,
Nb: z = 3 - 4 at%,
B: v = 5 - 9 at%,
Cu: w = 1 at%,
with y + z = 6 - 7 at%,
and y + z + v > 12 - 16 at%.

8. Frequency separating filter according to claim 1, characterized in that
the alloy has the composition $Fe_xM_yB_zCu_w$, with M indicating an element from the group Zr, Hf, Nb and x + y + z + w = 100 at%, with
Fe: x = 100 at% - y - z - w,
M: y = 6 - 8 at%,
B: z = 3 - 9 at%,
Cu: w = 0 - 1.5 at%.

9. Frequency separating filter according to claim 8, characterized in that
the following relationships apply:

Fe: x = 83 - 91 at%,
M: y = 7 at%,
B: z = 3 - 9 at%,
Cu: w = 0 - 1.5 at%.

10. Frequency separating filter according to claim 1, characterized in that
the alloy has the composition $(Fe_{0.98}Co_{0.02})_{90-x}Zr_7B_{2+x}Cu_1$, with $x = 0 - 3$, with the residual alloy component Co able to be replaced by Ni with appropriate equalization.

11. Frequency separating filter according to claim 10, characterized in that
$x = 0$.

12. Frequency separating filter according to claim 4, characterized in that
the alloy also has an element which is Co or Ni.

13. Frequency separating filter according to claim 12, characterized in that
the alloy also has Co_b with
Co: b = 0 - 15 at%.

14. Frequency separating filter according to claim 5, characterized in that
the alloy also has Co_b with
Co: b = 0 - 0.5 at%.

[see source for Figures]

Temperatur	temperature
Zeit	time
Querfeld	transverse field
Curietemperatur	Curie temperature